



Inductive sensor NBB20-L2-B3-V1

- Sensor head bidirectional and rotatable
- Basic series
- NO/NC selectable
- Oscillator monitoring
- On/Off delay (disconnectable)



Dimensions



Technical Data

General specifications

Switching function	Normally open/closed (NO/NC) programmable	
Output type	AS-Interface	
Rated operating distance	s_n	20 mm
Installation	flush	
Assured operating distance	s_a	0 ... 16.2 mm
Reduction factor r_{Al}	0.33	
Reduction factor r_{Cu}	0.31	
Reduction factor r_{304}	0.74	
Reduction factor r_{Brass}	0.41	

Release date: 2025-03-12 Date of issue: 2025-03-12 Filename: 226317_eng.pdf

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

Pepperl+Fuchs Group
www.pepperl-fuchs.com

USA: +1 330 486 0001
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 1111
fa-info@de.pepperl-fuchs.com

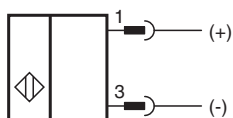
Singapore: +65 6779 9091
fa-info@sg.pepperl-fuchs.com

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Technical Data

Node type		Standard node
AS-Interface specification		V2.1
Required gateway specification		≥ V2.1
Output type		2-wire
Nominal ratings		
Operating voltage	U_B	26.5 ... 31.9 V via AS-i bus system
Switching frequency	f	0 ... 150 Hz
Hysteresis	H	typ. 5 %
Reverse polarity protection		reverse polarity protected
No-load supply current	I_0	≤ 40 mA
Time delay before availability	t_v	≤ 1000 ms
Operating voltage indicator		LED, green
Switching state indicator		dual-LED, yellow
Error indicator		dual-LED, red
Functional safety related parameters		
MTTF _d		1330 a
Mission Time (T_M)		20 a
Diagnostic Coverage (DC)		0 %
Compliance with standards and directives		
Standard conformity		
Standards		EN IEC 60947-5-2
Approvals and certificates		
UL approval		cULus Listed, General Purpose
CCC approval		CCC approval / marking not required for products rated ≤36 V
Ambient conditions		
Ambient temperature		-25 ... 70 °C (-13 ... 158 °F)
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Mechanical specifications		
Connection type		Connector plug
Housing material		PA
Sensing face		PA
Degree of protection		IP69K
Connector		
Threading		M12 x 1
Number of pins		4
Mass		130 g
Dimensions		
Height		40 mm
Width		40 mm
Length		67 mm

Connection



Connection Assignment



Additional Information

Programming Instructions

Address 00 preset, alterable via Busmaster or programming units

IO-Code 1

ID-Code 1

ID1-Code F

ID2-Code F

Data bit

Bit Function

D0 switching state¹⁾
(0 = damped; 1 = undamped)

D1 not used

D2 oscillator monitoring
(0 = oscillator defective,
1 = normal operation)

D3 not used

Parameter bit

Bit Function

P0 ON / Off delay
activated* / deactivated

P1 switching element function²⁾
(0 = NC; 1 = NO)

P2 not used

P3 not used

¹⁾ Applies to NO funktion (P1 = 1; preset),

with NC function (P1 = 0) reversed characteristics

²⁾ Default setting: NO

Operation

Indication depending on the operation mode

Symptoms	green LED (POWER)	red LED (FAULT)	Data bit D2
normal operation	on	off	1
Oscillator defect	flashing	flashing	0
no communication	off	on	1

On/off delay:

The on/off delay is preset and switched on (P0=1). On delay approx.15 ms, when P0=1 and NO function (P1=1). Off delay approx.15 ms, when P0=1 and NC function (P1=0).